

Section II (Remarks)

Amendment of the Claims

Claims 16 and 17 have been amended herein, to recite that the nanoparticle components (hyaluronic acid salt, cationic polymer, polyanionic salt and active ingredient) **do not have covalent bonds between them**. Such amendment is consistent with and supported by the disclosure at page 9, lines 28-31 of the present application (“[i]t is, therefore, an **ionic gelling method** which occurs in a controlled manner and will provide stability to the system, **without the need to create covalent bonds between the components**” (emphasis added)).

In addition, claim 16 has been amended to replace the recital therein of “the method of claim 1” with the corresponding recital of steps and features of the method as specified in claim 1.

Thus, in applicants’ invention as now claimed, a crosslinking agent (polyanionic salt) is employed, but such agent **only ionically crosslinks the cationic molecule**, leading to the gelling of the cationic polymer.

In contrast to contrast to compositions in which covalent bonding is present between the components, the nanoparticles of the present invention have substantially greater stability – see generally the discussion in the Summary of the Invention portion of the present application at page 8, line 25 to page 10, line 10 thereof, concerning the differences between crosslinking involving chemical (covalent) bonds, and ionic interactions. As there discussed, the nanoparticles of the present invention achieve superior stability without the use of organic solvents and extreme conditions (low temperatures).

See also the description in the present application at page 10, lines 12-22, reproduced below for ease of reference:

“The present invention discloses the preparation of nanoparticles formed from a hyaluronic acid salt and another hydrophilic polymer capable of interacting with said glycosaminoglycan, said interaction being mediated by **a polyanionic salt capable of crosslinking the system by establishing electrostatic interactions**.

The method to obtain the particles is a simple method which avoids the use of organic solvents as well as drastic conditions. Furthermore, **neither is it necessary to perform any type of chemical reaction to obtain same, as the crosslinking process is ionic, as has been indicated.**" (emphasis added)

In addition to the foregoing amendments, new claims 29-31 have been added herein. New claim 29 is of dependent form under claim 17, and recites that the proportion of hyaluronic acid: cationic polymer: polyanionic salt is between 1:0.5:0.1 and 1:10:2. New claim 30 likewise depends from claim 17, and recites that the proportion of hyaluronic acid: cationic polymer: polyanionic salt is between 1:1:0.15 and 1:10:1.5. Such claims are supported by the disclosure at page 4, paragraph [0044] of the application (as published on August 24, 2006 as U.S. Patent Application Publication 2006/0188578).

New claim 31 is of dependent form under claim 17, and recites that the nanoparticles are in a lyophilized form, consistent with the disclosure at page 4, paragraph [0045] of U.S. Patent Application Publication 2006/0188578.

Accordingly, no new matter (35 USC 132) has been introduced by the amendments of claims 16 and 17 and by the added new claims 29-31.

Rejection of Claims Under 35 U.S.C. §103

In the January 6, 2009 Office Action, claims 16-20 and 22 were rejected under 35 U.S.C. §103(a) as unpatentable over Prokop U.S. Patent Application Publication 2003/0170313 in view of Calias et al. U.S. Patent Application Publication 2003/0087877.

Such rejection of claims is traversed, in application to claims 16-20 and 22 as amended herein. Reconsideration of the patentability of such claims is requested, in light of the ensuing remarks.

Patentable Distinction of Claims 16-20 and 22 Over the Art

The non-covalently bonded character of the nanoparticle components in the nanoparticles of the present invention has been recited in amended claims 16 and 17. All remaining claims 18-20 and 22 depend directly from claim 17, as do newly added claims 29-31. The Prokop in view of Calias et al. combination fails to disclose or provide any derivative basis for nanoparticles in which components are devoid of covalent bonds. The nanoparticles of the claimed invention, despite the absence of such covalent bonding of components, achieves a strikingly enhanced stability, in relation to compositions of the type disclosed in Prokop, which exhibit stability for only 3-5 days unless temperature is reduced to near-zero conditions and covalent crosslinking is employed.

By contrast, the nanoparticles of the applicants' claimed invention are characterized by a stability of at least one month of ambient temperature storage, with respect to particle size and surface charge characteristics, as described for example at page 18, line 16 to page 19, line 1 of the application (“[p]article size and surface charge measurements were made, during one month, with the aim of obtaining information on the system evolution with time ...[t]he results presented in figures 4 and 5 showed the little variability of the parameters, size and zeta potential, during the storage”).

Accordingly, it is clear that claims 16-20 and 22, as amended herein, as well as newly added claims 29-31, are fully patentably distinguished over the cited references, and in form and condition for allowance. A Notice of Allowance therefore is requested.

Request for Rejoinder of Withdrawn Claims 1-15, 21 and 23-28

Consistent with the foregoing remarks establishing the patentability of claims 16-20, 22, and 29-31, it is requested that withdrawn method claims 1-15, 21 and 23-28 be rejoined under the provisions of MPEP 821.04, and thereupon be likewise allowed. Such rejoinder is proper since all withdrawn claims 1-15, 21 and 23-28 involve nanoparticles as specified in claims 16 and 17.

Respectfully submitted,

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